

The VCH preferably have a predominantly isotactic or syndiotactic diad configuration, more particularly, polymers with a proportion of 50.1 to 74% syndiotactic diads are preferred, more particularly preferably 52 to 70%.

5 Comonomers which may be used in preference during the polymerisation of the starting polymers (optionally substituted polystyrene) and incorporated in the polymer include: olefins generally having 2 to 10 C atoms such as, for example, ethylene, propylene, isoprene, isobutylene, butadiene, C<sub>1</sub>-C<sub>8</sub> preferably C<sub>1</sub>-C<sub>4</sub>-alkyl  
10 esters of acrylic and methacrylic acid, unsaturated cycloaliphatic hydrocarbons, e.g., cyclopentadiene, cyclohexene, cyclohexadiene, optionally substituted norbornene, dicyclopentadiene, dihydrocyclopentadiene, optionally substituted tetracyclododecenes, styrenes alkylated on the nucleus,  $\alpha$ -methylstyrene, divinylbenzene, vinyl esters, vinyl acids, vinyl ethers, vinyl acetate, vinyl cyanides such as, for example, acrylonitrile, methacrylonitrile, maleic anhydride and mixtures  
15 of said monomers. In general, up to 60 wt.% of comonomers based on the polymer may be contained in the polymer, preferably up to 50 wt.%, particularly up to 40 wt.%, most particularly preferably the polymers 1 may contain up to 30 wt.% of comonomers.

20 The vinylcyclohexane (co)polymers generally have absolute molecular weights Mw (weight-average) of 1000 - 10000000, preferably 60000 - 1000000, more particularly preferably 70000 - 600000, determined by light scattering.

25 The copolymers may be present both as random copolymers and as block copolymers.

The polymers may have a linear chain structure and have branching sites due to co-units (e.g. graft copolymers). The branching centres include, e.g. star-shaped or branched polymers. The polymers according to the invention may have other  
30 geometric shapes of the primary, secondary, tertiary, optionally quaternary polymer

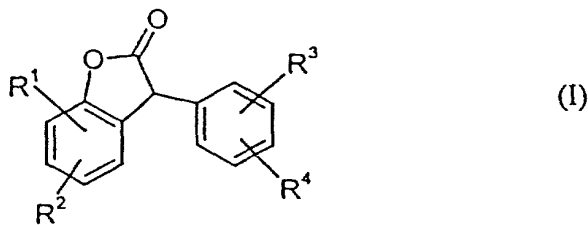
structure. Examples include helix, double helix, folded sheet etc. or mixtures of said structures.

Block copolymers include di-blocks, tri-blocks, multi-blocks and star-shaped block copolymers.

### Component B

The stabiliser system contains lactone corresponding to formula (I), sterically hindered phenol corresponding to formula (II) and phosphite component corresponding to formula (III), wherein one or more compounds corresponding to formulae (I), (II) and (III) may be used.

Lactones are preferably compounds corresponding to formula (I)

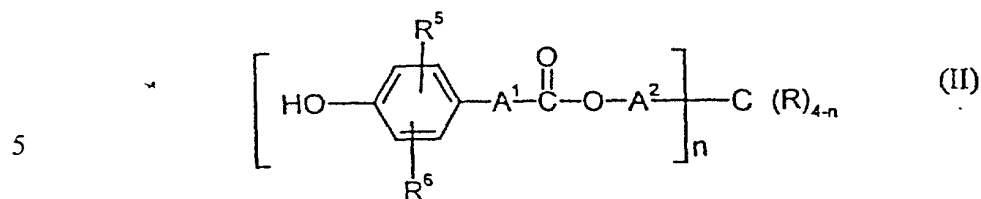


wherein

$R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$ , independently of each other, represent hydrogen or  $C_1$ - $C_6$ -alkyl, preferably  $C_1$ - $C_4$ -alkyl, optionally a 5 or 6-membered ring, preferably cyclohexyl or cyclopentyl.  $R^1$  and  $R^2$ , independently of each other, particularly preferably represent for branched  $C_3$ - $C_4$ -alkyl, particularly isopropyl and/or tert.-butyl.

A particularly preferred lactone is 5,7-di-t-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one.

Sterically hindered phenols are preferably compounds corresponding to formula (II)



wherein

10  $\text{R}^5$  and  $\text{R}^6$ , independently of each other, represent hydrogen or  $\text{C}_1$ - $\text{C}_6$ -alkyl, preferably  $\text{C}_1$ - $\text{C}_4$ -alkyl, optionally a 5 or 6-membered ring, preferably cyclohexyl or cyclopentyl,

15  $\text{R}^5$  and  $\text{R}^6$ , independently of each other, represent particularly preferably  $\text{C}_3$ - $\text{C}_4$ -alkyl, particularly for iso-propyl and/or tert.-butyl,

20  $n$  represents an integer from 1 to 4, preferably for 3 or 4, particularly 4,

$\text{A}^1$  and  $\text{A}^2$ , independently of each other, represent  $\text{C}_1$ - $\text{C}_6$ -alkylene, preferably  $\text{C}_1$ - $\text{C}_4$ -alkylene, particularly methylene, ethylene,

25  $\text{R}$ , independently, represents hydrogen,  $\text{C}_1$ - $\text{C}_6$ -alkyl, preferably  $\text{C}_1$ - $\text{C}_4$ -alkyl,  $\text{C}_1$ - $\text{C}_6$ -alkoxy, preferably  $\text{C}_1$ - $\text{C}_4$ -alkoxy, optionally a 5 or 6-membered ring, preferably cyclohexyl or cyclopentyl.

30 Phosphite components are preferably compounds corresponding to formula (III):

